

WHAT IS CLAIMED IS:

1. to 17. (canceled)
18. (currently amended) A comminution machine (1) for comminuting soft to medium hard comminution material (2), the comminution machine comprising:
 - a machine housing (3);
 - a feed channel (13) and a removal channel (14) connected to the machine housing (3);
 - a closed working cylinder (4), having comminution holes (5) and comprised of material with inherent stiffness, arranged in the machine housing (3);
 - a shaft (7) coaxially arranged to the working cylinder (4),
 - tools (6) mounted on the shaft (7) and rotating relative to the working cylinder;
 - wherein the tools (6) have vanes (9) revolving at a spacing (10) of at most a diameter of the comminution holes (5) practically contactless relative to the working cylinder (4);
 - wherein the vanes (9) have outer edges (11) slanted counter to a relative rotational direction (33, 34) between the working cylinder (4) and the tools (6);
 - wherein an orientation (15) of the shaft (7) and an axial orientation (15) of the working cylinder (4) deviate from a vertical line (16);
 - wherein the working cylinder (4) has a first end face opening (17) connected to the feed channel (13);
 - wherein the working cylinder (4) has a lower cylinder half (20) connected to the removal channel (14);
 - wherein the working cylinder (4) has a second end face opening (21) closed by a freely accessible lid (22), wherein the diameter (23) of the second end face opening (24) is at least as large as the greatest diameter (24) of the working cylinder (4);
 - wherein the shaft (7) extends from the feed channel (13) to the lid (22) at most to an inner wall (25) of the lid (22) but does not penetrate the lid (22);
 - wherein the working cylinder has a first end and a second end, wherein the first end of the working cylinder is centered in the machine housing in the area of an inlet opening of the feed channel and wherein the second end of the working cylinder is

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centered in the lid, wherein the lid axially secures the working cylinder;

wherein the working cylinder is immobile during comminution and configured to be fixed in several rotational positions.

19. (canceled)

20. (canceled)

21. (currently amended) The comminution machine according to claim 18 20, further comprising centering devices (27, 28), wherein the first and second end faces of the working cylinder (4) are clamped over the entire periphery of the first and second end faces by the centering devices (27, 28).

22. (currently amended) The A comminution machine according to claim 21, for comminuting soft to medium hard comminution material, the comminution machine comprising:

a machine housing;

a feed channel and a removal channel connected to the machine housing;

a closed working cylinder, having comminution holes and comprised of material with inherent stiffness, arranged in the machine housing;

a shaft coaxially arranged to the working cylinder,

tools mounted on the shaft and rotating relative to the working cylinder;

wherein the tools have vanes revolving at a spacing of at most a diameter of the comminution holes practically contactless relative to the working cylinder;

wherein the vanes have outer edges slanted counter to a relative rotational direction between the working cylinder and the tools;

wherein an orientation of the shaft and an axial orientation of the working cylinder deviate from a vertical line;

wherein the working cylinder has a first end face opening connected to the feed channel;

wherein the working cylinder has a lower cylinder half connected to the removal channel;

wherein the working cylinder has a second end face opening closed by a freely accessible lid, wherein the diameter of the second end face opening is at least as

large as the greatest diameter of the working cylinder;

wherein the shaft extends from the feed channel to the lid at most to an inner wall of the lid but does not penetrate the lid;

wherein the working cylinder has a first end and a second end, wherein the first end of the working cylinder is centered in the machine housing in the area of an inlet opening of the feed channel and wherein the second end of the working cylinder is centered in the lid, wherein the lid axially secures the working cylinder;

centering devices clamping the first and second end faces of the working cylinder over the entire periphery of the first and second end faces;

wherein the centering devices (27, 28) are rotatably (29, 30) supported and the working cylinder (4) has an external rotary drive (31) which engages the working cylinder (4) without interfering with a mountability of the lid (22).

23. (currently amended) The comminution machine according to claim 22, wherein the tools (6) are stationary and immobile during comminution and the working cylinder (4) is rotatingly driven relative to the tools (6).

24. (currently amended) The comminution machine according to claim 22, wherein the working cylinder (4) and the tools (6) are driven (31, 32) independently and in opposite directions relative to one another (33, 34).

25. (currently amended) The comminution machine according to claim 18, wherein the working cylinder (4) is stationary and immobile during comminution and the tools (6) are driven in rotation (32).

26. (currently amended) The comminution machine according to claim 18, wherein the shaft (7) penetrates the feed channel (13) and is free of shaft steps in the feed channel (13).

27. (currently amended) The comminution machine according to claim 26, further comprising a separate rotor (8), wherein the tools (6) are seated on a periphery of the separate rotor (8), wherein the separate rotor (8) is fixedly connected by a feather key (35) to the shaft (7) for torque transmission.

28. (currently amended) The comminution machine according to claim 26, wherein the shaft (7) is supported outside of the feed channel (13) in a floating

arrangement.

29. (currently amended) The comminution machine according to claim 18, wherein the lid (22) is connected (26) with one end face (38) flat against a counter surface of the machine frame (3) by a screw connection.

30. (currently amended) The comminution machine according to claim 29, wherein the tools (6) have first transverse edges (36) positioned on an inner side of the lid (22), wherein the first transverse edges (36) rotate across the inner side at a spacing as minimal as possible relative to the inner side of the lid (22) without contacting the inner side.

31. (currently amended) The comminution machine according to claim 30, wherein the machine housing (3) has a flat housing wall (39) on a side of the machine housing (3) opposite the lid (22), wherein the tools (6) have second transverse edges (37) positioned on the flat housing wall (39), wherein the second transverse edges (37) rotate at a spacing as minimal as possible to the flat housing wall (39) without contacting the flat housing wall (39).

32. (currently amended) The comminution machine according to claim 18, wherein the working cylinder (4) is straight-cylindrical and the orientation of the shaft (7) and the axial orientation of the working cylinder (4) are horizontal.

33. (currently amended) The comminution machine according to claim 18, wherein the working cylinder (4) is conical.

34. (currently amended) The comminution machine according to claim 33, wherein a lower surface line (40) of the working cylinder is positioned relative to a horizontal line at an angle between zero degrees and approximately 30 degrees.